

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | |
|--|---|
| In re Application of Leonard Presta Serial No.: To Be Assigned Filed: November 15, 2000 For: POLYPEPTIDE VARIANTS WITH ALTERED EFFECTOR FUNCTION | Group Art Unit: To Be Assigned Examiner: To Be Assigned CERTIFICATE OF MAILING I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner of Patents, Washington, D.C. 20231 on November 15, 2000 <i>Ann Savelli</i> Ann Savelli |
|--|---|

JCS15 U.S. PTO
09/713425
11/15/00**CERTIFICATE RE: SEQUENCE LISTING****BOX SEQUENCE**Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

I hereby state that the Sequence Listing submitted herewith is submitted in paper copy and a computer-readable diskette, and that the information recorded in computer readable form is identical to the written sequence listing. I further state that this submission includes no new matter.

Respectfully submitted,

GENENTECH, INC.

Date: November 15, 2000

By: *Wendy M. Lee*Wendy M. Lee
Reg. No. 40,3781 DNA Way
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Phone: (650) 225-1994
Fax: (650) 952-9881

Sequence Listing

<110> Leonard Presta

<120> Polypeptide Variants with Altered Effector Function

<130> 11730-F111

<141> ZC00-11-15

<150> US 09/483,588

<151> ZC00-01-14

<150> US 60/116,024

<151> 1999-01-15

<160> 11

<110> 1

<111> 218

<112> PET

<113> Artificial Sequence

<120>

<220> Sequence is completely synthesized

<400> 1

| | | | | | | | | | | | | | | |
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| Asp | Ile | Gln | Leu | Thr | Gln | Ser | Pro | Ser | Ser | Leu | Ser | Ala | Ser | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Asp | Arg | Val | Thr | Ile | Thr | Cys | Arg | Ala | Ser | Lys | Pro | Val | Asp |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Gly | Glu | Gly | Asp | Ser | Tyr | Leu | Asn | Trp | Tyr | Gln | Gln | Lys | Pro | Gly |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Lys | Ala | Pro | Lys | Leu | Leu | Ile | Tyr | Ala | Ala | Ser | Tyr | Leu | Glu | Ser |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Gly | Val | Pro | Ser | Arg | Phe | Ser | Gly | Ser | Gly | Ser | Gly | Thr | Asp | Phe |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Thr | Leu | Thr | Ile | Ser | Ser | Leu | Gln | Pro | Glu | Asp | Phe | Ala | Thr | Tyr |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Tyr | Cys | Gln | Gln | Ser | His | Glu | Asp | Pro | Tyr | Thr | Phe | Gly | Gln | Gly |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Thr | Lys | Val | Glu | Ile | Lys | Arg | Thr | Val | Ala | Ala | Pro | Ser | Val | Phe |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Ile | Phe | Pro | Pro | Ser | Asp | Glu | Gln | Leu | Lys | Ser | Gly | Thr | Ala | Ser |
| | | | 125 | | | | | | 130 | | | | | 135 |
| Val | Val | Cys | Leu | Leu | Asn | Asn | Phe | Tyr | Pro | Arg | Glu | Ala | Lys | Val |
| | | | 140 | | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Trp | Lys | Val | Asp | Asn | Ala | Leu | Gln | Ser | Gly | Asn | Ser | Gln | Gln |
| | | | | 135 | | | | | 160 | | | | | 165 |
| Ser | Val | Thr | Glu | Gln | Asp | Ser | Lys | Asp | Ser | Thr | Tyr | Ser | Leu | Ser |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ser | Thr | Leu | Thr | Leu | Ser | Lys | Ala | Asp | Tyr | Glu | Lys | His | Lys | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Tyr | Ala | Cys | Glu | Val | Thr | His | Gln | Gly | Leu | Ser | Ser | Phe | Val | Thr |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Lys | Ser | Phe | Asn | Arg | Gly | Glu | Cys | | | | | | | |
| | | | | 215 | | | | | | | | | | |

<210> 2

<211> 451

<212> PRT

<213> Artificial Sequence

<220>

<221> Sequence is completely synthesized

<100> 2

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| Glu | Val | Gln | Leu | Val | Glu | Ser | Gly | Gly | Gly | Leu | Val | Gln | Pro | Gly |
| 1 | | | | 5 | | | | | | 10 | | | | 15 |
| Gly | Ser | Leu | Arg | Leu | Ser | Cys | Ala | Val | Ser | Gly | Tyr | Ser | Ile | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ser | Gly | Tyr | Ser | Trp | Asn | Trp | Ile | Arg | Gln | Ala | Pro | Gly | Lys | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Glu | Trp | Val | Ala | Ser | Ile | Lys | Tyr | Ser | Gly | Glu | Thr | Lys | Tyr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asn | Pro | Ser | Val | Lys | Gly | Arg | Ile | Thr | Ile | Ser | Arg | Asp | Asp | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Asn | Thr | Phe | Tyr | Leu | Gln | Met | Asn | Ser | Leu | Arg | Ala | Glu | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Thr | Ala | Val | Tyr | Tyr | Cys | Ala | Arg | Gly | Ser | His | Tyr | Phe | Gly | His |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Trp | His | Phe | Ala | Val | Trp | Gly | Gln | Gly | Thr | Leu | Val | Thr | Val | Ser |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Ala | Ser | Thr | Lys | Gly | Pro | Ser | Val | Phe | Pro | Leu | Ala | Pro | Ser |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Lys | Ser | Thr | Ser | Gly | Gly | Thr | Ala | Ala | Leu | Gly | Cys | Leu | Val |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Lys | Asp | Tyr | Phe | Pro | Glu | Pro | Val | Thr | Val | Ser | Trp | Asn | Ser | Gly |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Ala | Leu | Thr | Ser | Gly | Val | His | Thr | Phe | Pro | Ala | Val | Leu | Gln | Ser | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | |
| Ser | Gly | Leu | Tyr | Ser | Leu | Ser | Ser | Val | Val | Thr | Val | Pro | Ser | Ser | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | |
| Ser | Leu | Gly | Thr | Gln | Thr | Tyr | Ile | Cys | Asn | Val | Asn | His | Lys | Pro | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | |
| Ser | Asn | Thr | Lys | Val | Asp | Lys | Lys | Val | Gln | Pro | Lys | Ser | Cys | Asp | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | |
| Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Leu | Leu | Gly | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | |
| Gly | Pro | Ser | Val | Ile | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | |
| Met | Ile | Ser | Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | |
| Ser | His | Glu | Asp | Pro | Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | |
| Val | Glu | Val | His | Asn | Ala | Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | |
| Asn | Ser | Thr | Tyr | Arg | Val | Val | Ser | Val | Leu | Thr | Val | Leu | His | Gln | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | |
| Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | |
| Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr | Ile | Ser | Lys | Ala | Lys | Gly | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | |
| Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr | Thr | Leu | Pro | Pro | Ser | Arg | Gln | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | |
| Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Thr | Cys | Leu | Val | Lys | Gly | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | |
| Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser | Asn | Gly | Gln | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | |
| Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu | Asp | Ser | Asp | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | |
| Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | Asp | Lys | Ser | Arg | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | |
| Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu | Ala | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | |
| Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | |

Lys

<210> 3
 <211> 218
 <212> PRT
 <213> homo sapiens

<400> 2
 Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro
 1 5 10 15
 Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
 20 25 30
 Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
 35 40 45
 Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 50 55 60
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser
 65 70 75
 Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
 80 85 90
 Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys
 95 100 105
 Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
 110 115 120
 Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
 125 130 135
 Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
 140 145 150
 Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
 155 160 165
 Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
 170 175 180
 Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
 185 190 195
 Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
 200 205 210
 Ser Leu Ser Leu Ser Pro Gly Lys
 215

<210> 4
 <211> 218
 <212> PRT
 <213> homo sapiens

<400> 4

Pro Ala Pro Glu Leu Leu Gly Gly Ile Ser Val Pro Leu The Pro
 1 5 10 15
 Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
 20 25 30
 Thr Cys Val Val Val Asp Val Ser His Gln Asp Pro Glu Val Lys
 35 40 45
 Phe Asn Trp Tyr Val Asp Gly Val Gln Val His Asn Ala Lys Thr
 50 55 60
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser
 65 70 75
 Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
 80 85 90
 Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys
 95 100 105
 Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
 110 115 120
 Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
 125 130 135
 Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
 140 145 150
 Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
 155 160 165
 Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
 170 175 180
 Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
 185 190 195
 Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
 200 205 210
 Ser Leu Ser Leu Ser Pro Gly Lys
 215

42100 5
 42110 217
 42120 P5T
 42130 homo sapiens

44900 5
 Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro
 1 5 10 15
 Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
 20 25 30

| | | | |
|---|-----|-----|-----|
| Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Glu Phe | 35 | 40 | 45 |
| Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys | 50 | 55 | 60 |
| Phe Arg Glu Glu Glu Phe Asn Ser Thr Ile Arg Val Val Phe Val | 65 | 70 | 75 |
| Leu Thr Val Val His Glu Asp Trp Leu Asn Gly Lys Glu Tyr Lys | 80 | 85 | 90 |
| Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr | 95 | 100 | 105 |
| Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Glu Val Tyr Thr | 110 | 115 | 120 |
| Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu | 125 | 130 | 135 |
| Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu | 140 | 145 | 150 |
| Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro | 155 | 160 | 165 |
| Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu | 170 | 175 | 180 |
| Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys | 185 | 190 | 195 |
| Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser | 200 | 205 | 210 |
| Leu Ser Leu Ser Pro Gly Lys | 215 | | |

C10: 6
 C11: 118
 C12: PRT
 C13: homo sapiens

| | | | | |
|---|----|----|----|----|
| Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro | 1 | 5 | 10 | 15 |
| Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val | 20 | 25 | 30 | 35 |
| Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Glu | 40 | 45 | 50 | 55 |
| Phe Lys Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr | 60 | 65 | 70 | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Pro | Arg | Glu | Glu | Gln | Phe | Asn | Ser | Thr | Phe | Arg | Val | Val | Ser |
| | | | | 65 | | | | | | | | | | 75 |
| Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr |
| | | | | 80 | | | | | | 85 | | | | 90 |
| Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Gln | Lys |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Thr | Ile | Ser | Lys | Thr | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr |
| | | | | 110 | | | | | | 115 | | | | 120 |
| Thr | Leu | Pro | Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser |
| | | | | 125 | | | | | | 130 | | | | 135 |
| Leu | Thr | Cys | Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val |
| | | | | 140 | | | | | | 145 | | | | 150 |
| Glu | Trp | Glu | Ser | Ser | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Asn | Thr | Thr |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Pro | Pro | Met | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys |
| | | | | 170 | | | | | | 175 | | | | 180 |
| Leu | Thr | Val | Asp | Lys | Ser | Arg | Trp | Gln | Gln | Gly | Asn | Ile | Phe | Ser |
| | | | | 185 | | | | | | 190 | | | | 195 |
| Cys | Ser | Val | Met | His | Glu | Ala | Leu | His | Asn | Arg | Phe | Thr | Gln | Lys |
| | | | | 200 | | | | | | 205 | | | | 210 |
| Ser | Leu | Ser | Leu | Ser | Pro | Gly | Lys | | | | | | | |
| | | | | 215 | | | | | | | | | | |

0110-7
 0111-218
 0112- PRT
 0113- homo sapiens

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Pro | Glu | Phe | Leu | Gly | Gly | Pro | Ser | Val | Phe | Leu | Phe | Pro |
| | 1 | | | 5 | | | | | 10 | | | | | 15 |
| Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser | Arg | Thr | Pro | Glu | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Cys | Val | Val | Val | Asp | Val | Ser | Gln | Glu | Asp | Pro | Glu | Val | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn | Ala | Lys | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Lys | Pro | Arg | Glu | Gln | Gln | Phe | Asn | Ser | Thr | Tyr | Arg | Val | Val | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Cys | Lys | Val | Ser | Asn | Lys | Gly | Leu | Pro | Ser | Ser | Ile | Glu | Lys |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Thr | Ile | Pro | Pro | Pro | Gln | Gln | Gln | Met | Thr | Lys | Asn | Gln | Val | Pro |
| | | | | | 115 | | | | 130 | | | | | 135 |
| Leu | Thr | Cys | Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val |
| | | | | 130 | | | | | 135 | | | | | 150 |
| Glu | Trp | Glx | Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr |
| | | | | 145 | | | | | 160 | | | | | 165 |
| Pro | Pro | Val | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Arg |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Thr | Val | Asp | Lys | Ser | Arg | Trp | Gln | Glu | Gly | Asn | Val | Phe | Ser |
| | | | | 175 | | | | | 190 | | | | | 195 |
| Cys | Ser | Val | Met | His | Glu | Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Ser | Leu | Ser | Leu | Ser | Leu | Gly | Lys | | | | | | | |
| | | | | | | | | | | | | | | 215 |

4110: 8
 4111: 215
 4112: PRT
 4113: Mus musculus

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Val | Pro | Glu | Val | Ser | Ser | Val | Phe | Ile | Phe | Pro | Pro | Lys | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Lys | Asp | Val | Leu | Thr | Ile | Thr | Leu | Thr | Pro | Lys | Val | Thr | Cys | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Val | Asp | Ile | Ser | Lys | Asp | Asp | Pro | Glu | Val | Gln | Phe | Ser | Trp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Phe | Val | Asp | Asp | Val | Glu | Val | His | Thr | Ala | Gln | Thr | Gln | Pro | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Glu | Glu | Gln | Phe | Asn | Ser | Thr | Phe | Arg | Ser | Val | Ser | Glu | Leu | Pro |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ile | Met | His | Gln | Asp | Cys | Leu | Asn | Gly | Lys | Glu | Phe | Lys | Cys | Arg |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Val | Asn | Ser | Ala | Ala | Phe | Pro | Ala | Pro | Ile | Glu | Lys | Thr | Ile | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Lys | Thr | Lys | Gly | Arg | Pro | Lys | Ala | Pro | Gln | Val | Tyr | Thr | Ile | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Pro | Lys | Glu | Gln | Met | Ala | Lys | Asp | Lys | Val | Ser | Leu | Thr | Cys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Met | Ile | Thr | Asp | Phe | Ile | Pro | Glu | Asp | Leu | Thr | Val | Glu | Trp | Gln |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Trp | Asn | Gly | Gln | Pro | Ala | Gln | Asn | Tyr | Lys | Asn | Thr | Gln | Ile | Ile |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Met | Asp | Thr | Asp | Gly | Ser | Tyr | Phe | Val | Tyr | Ser | Lys | Leu | Asn | Val |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gln | Lys | Ser | Asn | Trp | Glu | Ala | Gly | Asn | Thr | Phe | Thr | Cys | Ser | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu | His | Glu | Gly | Leu | His | Asn | His | His | Thr | Glu | Lys | Ser | Leu | Ser |
| | | | | 200 | | | | | 205 | | | | | 210 |
| His | Ser | Pro | Gly | Lys | | | | | | | | | | |
| | | | | 215 | | | | | | | | | | |

<210> "

<211> 118

<212> ERT

<213> Mus musculus

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Pro | Asn | Leu | Leu | Gly | Gly | Pro | Ser | Val | Phe | Ile | Phe | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Pro | Lys | Ile | Lys | Asp | Val | Leu | Met | Ile | Ser | Leu | Ser | Pro | Ile | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Cys | Val | Val | Val | Asp | Val | Ser | Glu | Asp | Asp | Pro | Asp | Val | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ile | Ser | Trp | Phe | Val | Asn | Asn | Val | Glu | Val | His | Thr | Ala | Gln | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gln | Thr | His | Arg | Glu | Asp | Tyr | Asn | Ser | Thr | Leu | Arg | Val | Val | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ala | Leu | Pro | Ile | Gln | His | Gln | Asp | Trp | Met | Ser | Gly | Lys | Glu | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Cys | Lys | Val | Asn | Asn | Lys | Asp | Leu | Pro | Ala | Pro | Ile | Glu | Arg |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Thr | Ile | Ser | Lys | Pro | Lys | Gly | Ser | Val | Arg | Ala | Pro | Gln | Val | Tyr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Val | Leu | Pro | Pro | Pro | Glu | Glu | Glu | Met | Thr | Lys | Lys | Gln | Val | Thr |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Thr | Cys | Met | Val | Thr | Asp | Phe | Met | Pro | Glu | Asp | Ile | Tyr | Val |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Trp | Thr | Asn | Asn | Gly | Lys | Thr | Glu | Leu | Asn | Tyr | Lys | Asn | Thr |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Glu | Pro | Val | Leu | Asp | Ser | Asp | Gly | Ser | Tyr | Phe | Met | Tyr | Ser | Lys |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Arg | Val | Glu | Lys | Lys | Asn | Trp | Val | Glu | Asn | Asn | Ser | Tyr | Phe |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Cys | Ser | Val | Val | His | Glu | Gly | Leu | His | Asn | His | His | Thr | Thr | Lys |
| | | | | 200 | | | | 205 | | | | | | 210 |
| Ser | Phe | Ser | Arg | Thr | Pro | Gly | Lys | | | | | | | |
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| Pro | Ala | Pro | Asn | Leu | Glu | Gly | Gly | Pro | Ser | Val | Phe | Ile | Phe | Pro |
| 1 | | | | 1 | | | | | 10 | | | | | 15 |
| Pro | Asn | Ile | Lys | Asp | Val | Leu | Met | Ile | Ser | Leu | Thr | Pro | Lys | Val |
| | | | | 25 | | | | | 35 | | | | | 40 |
| Thr | Cys | Val | Val | Val | Asp | Val | Ser | Glu | Asp | Asp | Pro | Asp | Val | Gln |
| | | | | 45 | | | | | 50 | | | | | 55 |
| Ile | Ser | Trp | Phe | Val | Asn | Asn | Val | Glu | Val | His | Thr | Ala | Gln | Thr |
| | | | | 60 | | | | | 65 | | | | | 70 |
| Gln | Thr | His | Arg | Glu | Asp | Tyr | Asn | Ser | Thr | Ile | Arg | Val | Val | Ser |
| | | | | 75 | | | | | 80 | | | | | 85 |
| His | Leu | Pro | Ile | Gln | His | Gln | Asp | Trp | Met | Ser | Gly | Lys | Glu | Phe |
| | | | | 90 | | | | | 95 | | | | | 100 |
| Lys | Cys | Lys | Val | Asn | Asn | Lys | Asp | Leu | Pro | Ser | Pro | Ile | Glu | Arg |
| | | | | 105 | | | | | 110 | | | | | 115 |
| Thr | Ile | Ser | Lys | Pro | Lys | Gly | Leu | Val | Arg | Ala | Pro | Gln | Val | Tyr |
| | | | | 120 | | | | | 125 | | | | | 130 |
| Thr | Leu | Pro | Pro | Pro | Ala | Glu | Gln | Leu | Ser | Arg | Lys | Asp | Val | Ser |
| | | | | 135 | | | | | 140 | | | | | 145 |
| Leu | Thr | Cys | Leu | Val | Val | Gly | Phe | Asn | Pro | Gly | Asp | Ile | Ser | Val |
| | | | | 150 | | | | | 155 | | | | | 160 |
| Glu | Trp | Thr | Ser | Asn | Gly | His | Thr | Glu | Glu | Asn | Tyr | Lys | Asp | Thr |
| | | | | 165 | | | | | 170 | | | | | 175 |
| Ala | Pro | Val | Leu | Asp | Ser | Asp | Gly | Ser | Tyr | Phe | Ile | Tyr | Ser | Lys |
| | | | | 180 | | | | | 185 | | | | | 190 |

Leu Asn Met Lys Thr Ser Lys Trp Glu Lys Thr Asp Ser Phe Ser
135 190 195

Cys Asn Val Arg His Glu Gly Leu Lys Asn Tyr Tyr Leu Lys Lys
200 205 210

Thr Ile Ser Arg Ser Pro Gly Lys
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Pro Lys Pro Lys Asp Ala Leu Met Ile Ser Leu Thr Pro Lys Val
20 25 30

Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp Val His
35 40 45

Val Ser Trp Phe Val Asp Asn Lys Glu Val His Thr Ala Trp Thr
50 55 60

Gln Pro Arg Glu Ala Gln Tyr Asn Ser Thr Phe Arg Val Val Ser
65 70 75

Ala Leu Pro Ile Gln His Gln Asp Trp Met Arg Gly Lys Glu Phe
80 85 90

Lys Cys Lys Val Asn Asn Lys Ala Leu Pro Ala Pro Ile Glu Arg
95 100 105

Thr Ile Ser Lys Pro Lys Gly Arg Ala Gln Thr Pro Gln Val Tyr
110 115 120

Thr Ile Pro Pro Pro Arg Glu Gln Met Ser Lys Lys Lys Val Ser
125 130 135

Leu Thr Cys Leu Val Thr Asn Phe Phe Ser Glu Ala Ile Ser Val
140 145 150

Glu Trp Glu Arg Asn Gly Glu Leu Glu Gln Asp Tyr Lys Asn Thr
155 160 165

Pro Pro Ile Leu Asp Ser Asp Gly Thr Tyr Phe Leu Tyr Ser Lys
170 175 180

Leu Thr Val Asp Thr Asp Ser Trp Leu Gln Gly Glu Ile Phe Thr
185 190 195

Cys Ser Val Val His Glu Ala Leu His Asn His His Thr Gln Lys
200 205 210

Asn Leu Ser Arg Ser Pro Gly Lys
215

114
115
116
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118
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122